



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,679	03/18/2004	Jianbo Lu	81095829	2678
28549 7590 05/09/2008 Dickinson Wright PLLC 38525 Woodward Avenue Suite 2000 Bloomfield Hills, MI 48304			EXAMINER SCHWARTZ, CHRISTOPHER P	
			ART UNIT 3683	PAPER NUMBER
			MAIL DATE 05/09/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/708,679

**Applicant(s)**

LU ET AL.

**Examiner**

Christopher P. Schwartz

**Art Unit**

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's response filed February 15, 2008 has been received and considered. No amendment to the claims has been made to place the claims into condition for allowance.
2. The claims remain **unduly broad** with respect to what is known, or collectively taught, in the prior art.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6,20,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. publication to Wessman '616 in view of Ritz et al. and the U.S. publication to Takeuchi '545.

Regarding claims 1,20 Wessman discloses a steering control device comprising a steering transmitting device and a sensor 5 "arranged to detect at least one parameter relating to a condition of the steering actuator and generate a signal indicative of the condition..." This publication goes on to disclose a method to reduce the turning radius of the vehicle by braking. See claim 1.

Lacking in Wessman are the specific terminology of brake steering and applicant's specific terminology of the vehicle being or entering into a "U-turn". But in claim 1 note Wessman claims "...said steering position signal indicates that the steering actuator is approaching a maximum limit position.." See also the limitations of claim 2.

Ritz et al. is relied upon to expand better upon this explanation that this is in fact occurring in Wessman. Please see columns 1 and 2 and column 6 lines 47-63 (of the patent '858—for reference).

The reference to Takeuchi provides a directional control system for an electric vehicle that controls the rotational speed difference of the motors 20 drive wheels based upon an output signal that represents the steering angle of the vehicle. See paragraph 0017. Note the steering/ turning curvature is speed dependent as discussed in paragraphs 0069-0071. And as stated in paragraph 0077 "Each of these (turning) patterns are classified into a gradual turn, standard turn, rapid turn, and U-turn of the vehicle, and selected as the drive mode of the respective drive wheels in accordance

with the vehicle speed.”. This reference is relied upon to show applicant’s limitation of “U-turn” is nothing more than equivalent terminology of when the vehicle is turning from one directional state of travel to an opposite one—180 degrees—and possibly at its maximum turn capability. That is, it refers simply to a state of turning of the vehicle. See also the broad definition of “U-turn” cited on the attached webpage.

It would have been obvious to have applied the teachings of Ritz et al. and Takeuchi, to that of Wessman for safety considerations, and easier turning convenience, when the vehicle enters into a curve, or when the vehicle is in the state of vehicle stability control, i.e. for increased safety.

Regarding claims 1-6,21 as broadly claimed, these requirements are fairly suggested by the references above and what is notoriously well known in the art.

6. Claims 7-19,22-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wessman ‘616 in view of Ritz et al. and Takeuchi as applied to claim 6 above, and further in view of Yamawaki et al. ‘113 or Nishizaki et al. ‘215 or Shinmura et al. ‘975 or the U.S. publication to Zheng et al. ‘847 or Harara et al. ‘019 and US publication to Recker et al.

Regarding claims 7-19,22-47, as broadly claimed by applicants, these limitations are well known in the art and are fairly suggested by Yamawaki et al. ‘113 or Nishizaki et al. ‘215 or Shinmura et al. ‘975 or Zheng et al. ‘847 or Harara et al. ‘019 and Recker et al.

To have applied the teachings of the modifying references above to Wessman ‘616, as modified by Ritz et al., would have been obvious to the ordinary skilled worker

in the art to offer improved operator steering feel and an improved vehicle stability control system.

For instance the limitation of a "boost curve" is not given much patentable weight since this merely amounts to an obvious alternative equivalent of using steering "target", "threshold", or "limit" values from look up tables or maps stored in the ECU/Microprocessor memory to in turn adjust the amount of brake steer. See for instance the abstract and figure 3a in the US publication to Recker et al.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-46 have been considered but they are not persuasive. Applicant's representative states at page 11 of the remarks filed February 15, 2008 that " Takeuchi responds to a "U-turn" request by reversing the directions of operation of the rear wheels, so that the wheels are rotating at a common, but rotationally opposite speed. This rotational reversal is puzzling because an automotive vehicle moving along a roadway could not continue translational motion if one of the wheels reversed its rotation. However, all of this becomes clear when one considers Takeuchi at paragraph 83, wherein it is apparent that Takeuchi is applying his system to a wheelchair, (emphasis added by the examiner) which, of course, may turn about the axis of its main axle by reversing the drive wheels. This is not a U-turn, either in Applicants' lexicon, or the lexicon previously employed by the Examiner during the examination of this case."

Takeuchi states in paragraph 0002 the invention relates to... "electric traveling vehicles... such as an electric car". Figure 1 shows a schematic of something that closely resembles such an electric car. Note the four motor driven wheels at 16, "the vehicle body 14" and the steering/speed and drive control units at 22 and 24. In paragraph 0007 the direction control device is a "circular steering wheel". The basis for independently controlling (i.e. speed/steering) of each of the motor actuators 20 at the wheels is "...based upon the angle signal designated with the steering angle setting means and steering angle detection mean for detecting the angle of the current traveling direction with the direct advancing state of the vehicle as the reference..." paragraph 0017.

The publication to Takeuchi clearly teaches a direction control device applied to an electric car experiencing various degrees of turn, including a "U-turn" as discussed in paragraph 0077, despite applicant's disingenuous interpretation of this publication to the contrary. This reference was relied upon primarily to give some definition to the meaning of "U-Turn", as broadly claimed, in a related vehicle application that uses some form of steering control to put the vehicle into such. It is maintained, however, that these teachings are inherent in the combination of references to Wessman and Ritz et al.

As previously stated on page 6 of the last Office Action, it is unclear where in the specification applicant's point to some special "lexicon" of a U-Turn.

Notwithstanding this argument, when a vehicle comes off the highway onto an exit ramp frequently the vehicle enters into a turn to take it into a direction completely

Art Unit: 3683

opposite from its original direction of travel (such as in the case of "Clover-Leaf" type exit ramp(s)). This turn can easily be considered to be a "U-turn" -- no matter how tight or how broad, as broadly claimed, and both references to Wessman and Ritz address this turning state of the vehicle, even if not explicitly stating the vehicle is in a "U-turn", per se.

The previously cited webpage shows how broadly the definition of "U-Turn" may reasonably be interpreted.

It seems applicant's representative is relying upon nothing more than simple semantics for patentability of these unduly broad claims.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 571-272-7123. The examiner can normally be reached on M-F 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rob Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher P. Schwartz/  
Primary Examiner, Art Unit 3683